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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,205	01/14/2002	Won Hee Lee	0630-1398P	6141

2292 7590 10/08/2003

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EXAMINER

PERRIN, JOSEPH L

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,205

Applicant(s)

LEE ET AL.

Examiner

Joseph L. Perrin, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of original claims 7-10 is withdrawn in view of the newly discovered reference(s) to US 4,603,489 to Goldberg. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, the location of the dehumidification device, *i.e.* "positioned at a *rear* side of the heater in the air flowing direction" renders the claim vague and indefinite. Specifically, the claimed dehumidification device being positioned at a "rear" side of the heater in the air flowing direction is not described in the original disclosure as filed. In the description of Figure 3, paragraph [0048], the dehumidification device is described, both textually and figuratively, as being "at the *front* of the heater 31 to the air flowing direction." Thus, as best understood from the original disclosure, the claim will be examined in accordance with the structural arrangement of the dehumidification means and heater in Figure 3, which is construed as being "at the *front* of the heater 31 to the

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air flowing direction.” However, clarification and correction is still required. It is noted that since the original disclosure as filed does not appear to be enabling for a dehumidification means being located on either side (*i.e.* either a *front* side or a *rear* side) of the heater in the disclosed air circulating duct, failure to correct the claim in accordance with Figure 3 may result in a new matter rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2001/0015082 to Minayoshi *et al.* (hereinafter "Minayoshi") in view of US 4,603,489 to Goldberg.

Re claims 1-2, Minayoshi discloses a washer/dryer with an outer tub 3 supported in a case 1, a drain hose (not numbered, attached to valve 26) connected to the lower side of the outer tube, a rotatable inner tube 3 centered around a vertical rotation shaft 9 and connected to motor 8, an air circulative duct including a blower 15, a heating means 16 and a dehumidification means 12, and wherein the case, outer tub and inner tub have an opened upper surface and a closing means 23 (see entire reference of Minayoshi, for instance, Figure 1 and col. 2, paragraph 27 *et seq.*).

Re claim 4, Minayoshi discloses the dehumidification means 12 positioned at the "rear side of the heater" 16 in the airflow direction of the air circulative duct (for instance, as illustrated in Figure 1 of Minayoshi). Re claim 6, Minayoshi discloses a water discharge pipe (not numbered) connected to the lower portion of the air circulative duct (for instance, as illustrated in the bottom right corner of Figure 1).

Re claim 5, since Minayoshi discloses a recirculating system, Minayoshi also discloses the blower, dehumidification device and heater being consecutively installed.

Minayoshi does not expressly disclose a dehumidifying means including a compressor, a condenser, a capillary tube and an evaporation thereby forming a refrigerating cycle circuit. However, Goldberg teaches that it is known to provide a dryer with a rotating drum and air-circulating duct with a refrigerating cycle circuit including a compressor, a condenser, a capillary tube and an evaporator to improve drying in a textile treating apparatus (see entire reference of Goldberg, for instance, col. 1, line 61 – col. 2, line 10, & Figures 1-2 and associated text).

Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the washer/dryer system of Minayoshi with the dehumidification system of Goldberg to provide improved dehumidification in a dryer system.

8. Claims 1 & 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,029,458 to Obata *et al.* (hereinafter "Obata") in view of Goldberg.

Re claim 1, Obata discloses a washer/dryer having an outer tub 4 supported in a case 1, a drain hose 36, an inner tub 7 rotatably driven by a driving motor 15 installed at the lower side of the outer tub, an air circulative duct (combination of air pathways 27 and 31) including a blower 24, a heating means 29, and a dehumidification means 32 utilizing cooling water (see entire reference of Obata, for instance, Figures 1-2 and col. 3, line 61 *et seq.*).

Re claim 3, Obata discloses the air circulative duct and drain hose being diverged and having a valve 35 at the position of divergence (see, for instance, Figure

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1). Re claim 4, Obata discloses the dehumidification means positioned at the rear side of the heater in the air flowing direction (see, for instance, Figure 2).

Re claim 5, since Obata discloses a recirculating system, Obata also discloses the blower, dehumidification device and heater being consecutively installed.

Obata does disclose using a cooling system for dehumidification, but Obata does not expressly disclose a dehumidifying means including a compressor, a condenser, a capillary tube and an evaporation thereby forming a refrigerating cycle circuit. However, Goldberg teaches that it is known to provide a dryer with a rotating drum and air-circulating duct with a refrigerating cycle circuit including a compressor, a condenser, a capillary tube and an evaporator to improve drying in a textile treating apparatus (see entire reference of Goldberg, for instance, col. 1, line 61 – col. 2, line 10, & Figures 1-2 and associated text).

Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the washer/dryer system of Minayoshi with the dehumidification system of Goldberg to provide improved dehumidification in a dryer system.

Allowable Subject Matter

9. Claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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10. The following is a statement of reasons for the indication of allowable subject matter:

11. The closest prior art references of record, Minayoshi, Obata & Goldberg, fail to teach each and every limitation of the instant invention. Specifically, the references fail to teach the claimed washer/drying further including the condenser being installed at a center portion of the drain hose and water cooling tank, which is disclosed as an essential element of claimed invention, as described in claim 7.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 4,471,537 to Meda, which discloses a dryer with a compressor, a condenser, a capillary tube and an evaporator.

US 4,621,438 to Lanciaux, which discloses a dryer with a compressor, a condenser, a capillary tube and an evaporator.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (703)305-0626. The examiner can normally be reached on M-F 7:30-5:00, except alternate Fridays.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703)308-4333. The fax phone

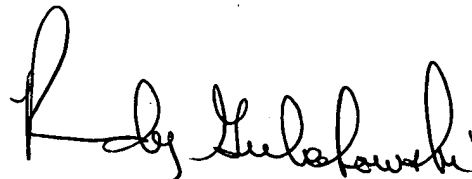
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numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Joseph L. Perrin, Ph.D.
Examiner
Art Unit 1746

jlj



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